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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/792,209

03/02/2004

In Hwan Choi

2080-3023C3

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05/15/2008

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EXAMINER

AN, SHAWN S

ART UNIT

PAPER NUMBER

2621

MAIL DATE

DELIVERY MODE

05/15/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/792,209 | Applicant(s) CHOI ET AL. | |
| | Examiner SHAWN AN | Art Unit 2621 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-79 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41-75 is/are allowed.
- 6) ☒ Claim(s) 76-79 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Request for Continued Examination

1. The request filed on 4/23/08 for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 10/792,209 is acceptable and a RCE has been established. An action on the RCE follows.

Response to Amendment

2. As per Applicant's instructions as filed on 4/23/08, claims 1-40 have been canceled, claims 42-46 have been amended, and claims 76-79 have been newly added.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 76-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knutson et al (6,788,710 B1) in view of Limberg (6,201,564 B1).

Regarding claim 76, Knutson et al discloses a method of processing a digital television (DTV) signal in a DTV receiver comprising:

receiving a DTV signal (Fig. 2, 18; Fig. 7, 70) including a data frame including normal data (Fig. 8, 83) and robust data (80) multiplexed (88) with the normal data, wherein predefined sequences (82) are inserted into the robust data (86; col. 6, lines 35-45), the normal data and the robust data results from performing an interleaving operation once (Fig. 2, 11).

Knutson et al performs the interleaving operation of robust data once as opposed to twice. However, Knutson et al teaches that the interleaver (11) scrambles the bytes to increase resistance to burst errors (col. 3, lines 32-33).

Therefore, it would have been considered an obvious design choice to a person of skill in the art to perform the interleaving operation of robust data twice (as opposed to once) in order to further increase resistance to burst errors.

Knutson et al does not particularly disclose performing channel equalization on the robust data in the data frame using the predefined sequences in order to enhance ghost cancellation performance of the robust data.

However, Limberg teaches a method of operating the channel equalizer in a receiver for DTV signals comprising performing channel equalization on the channel data in the data frame (Fig. 2, S3) based on ghost cancellation performance of the channel data (Fig. 5, S32-S34).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing a method of processing a digital television signal as taught by Knutson et al to incorporate Limberg's teaching as above so as to perform channel equalization on Knutson's robust data in the data frame using the predefined sequences in order to enhance ghost cancellation performance of the robust data.

Regarding claim 77, Knutson et al discloses MPEG data (abs.).

Regarding claim 78, Knutson et al discloses predefined sequences (82) being inserted into the robust data periodically (with respect to an aux. packet)(col. 6, lines 35-45).

Regarding claim 79, Knutson et al discloses the normal data (Packet N) and the robust data (Aux. and/or OSD Packet) being multiplexed at a multiplexing ratio of 1:N (Fig. 3, 8 VSB format 2:1 and/or 16 VSB format 1:1).

Allowable Subject Matter

5. Claims 41-75 are allowed.

Claims 41-75 are allowed as having incorporated the allowable subject matter(s) as previously discussed in the last Office action as filed on 1/24/08.

The prior art of record fails to anticipate or make obvious the novel features as specified in independent claims 41 and 64.

Accordingly, if rejected claims are canceled, the application would be placed in condition for allowance.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to *Shawn An* whose telephone number is 571-272-7324.

7. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SHAWN AN/

Primary Examiner, Art Unit 2621

5/13/08

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